

(12)特許協力条約に基づいて公開された国際出願

(19) 世界知的所有権機関
国際事務局(43) 国際公開日
2003年12月31日 (31.12.2003)

PCT

(10) 国際公開番号
WO 2004/001830 A1

(51) 国際特許分類: H01L 21/304

(21) 国際出願番号: PCT/JP2003/008048

(22) 国際出願日: 2003年6月25日 (25.06.2003)

(25) 国際出願の言語: 日本語

(26) 国際公開の言語: 日本語

(30) 優先権データ:
特願2002-184378 2002年6月25日 (25.06.2002) JP

(71) 出願人(米国を除く全ての指定国について): 東京エレクトロン株式会社 (TOKYO ELECTRON LIMITED) [JP/JP]; 〒107-8481 東京都港区赤坂五丁目3番6号 Tokyo (JP).

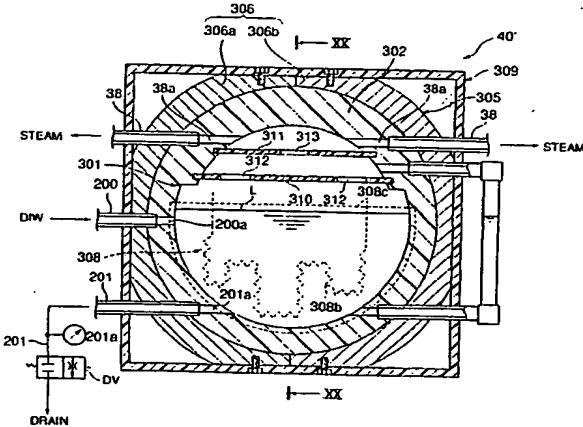
(72) 発明者; および
(75) 発明者/出願人(米国についてのみ): 伊藤 規宏 (ITOH,Norihiro) [JP/JP]; 〒841-0074 佐賀県鳥栖市西新町1375-41 東京エレクトロン九州株式会社 佐賀事業所内 Saga (JP). 川口 洋明 (KAWAGUCHI,Hiroaki) [JP/JP]; 〒841-0074 佐賀県鳥栖市西新町1375-41 東京エレクトロン九州株式会社 佐賀事業所内 Saga (JP). 長野 泰博 (CHOUNO,Yasuhiko) [JP/JP]; 〒841-0074 佐賀県鳥栖市西新町1375-41 東京エレクトロン九州株式会社 佐賀事業所内 Saga (JP).

(74) 代理人: 吉武 賢次, 外 (YOSHITAKE,Kenji et al.); 〒100-0005 東京都千代田区丸の内三丁目2番3号 富士ビル323号 協和特許法律事務所 Tokyo (JP).

/ 続葉有 /

(54) Title: SUBSTRATE PROCESSING DEVICE

(54) 発明の名称: 基板処理装置



WO 2004/001830 A1

(57) Abstract: A vapor generator (40') provided in a substrate processing device comprises a hollow cylinder-like member (302) formed from a composite of PTFE and PFA, and a tank (301) having a pair of side wall plates (303) connected to both ends of the cylinder-like member (302). The side wall plates (303) are formed of aluminum alloy, and PFA coating is applied on the inner faces of the plates. The periphery of the tank (301) is covered by an aluminum alloy-made shell (305) for preventing the tank from deforming caused by interior pressure of the tank. Heaters (308) are installed on the outer faces of plate-like members (307) of the shell (305). The shell (305) binds the tank (301), presses and crushes elastic seals (304) between the cylinder-like member (302) and the side wall plates (303), and effects sealing and joint between the cylinder-like member (302) and the side wall plates (303).

(57) 要約: 基板処理装置に設けられる蒸気発生器40'は、PTFEとPFAの混合物からなる中空円筒状部材302と、該円筒状部材302の両端に接続された一対の側壁板303とを有するタンク301を備えている。側壁板303はアルミニウム合金からなり、その内面にPFA被覆が施されている。タンク301の周囲は、タンク305の板状部材307の外面にはヒータ308

/ 続葉有 /



(81) 指定国(国内): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

GR, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI 特許(BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

添付公開書類:

- 國際調査報告書
- 請求の範囲の補正の期限前の公開であり、補正書受領の際には再公開される。

(84) 指定国(広域): ARIPO 特許(GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), ユーラシア特許(AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), ヨーロッパ特許(AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB,

2 文字コード及び他の略語については、定期発行される各PCTガゼットの巻頭に掲載されている「コードと略語のガイダンスノート」を参照。

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP03/08048

A. CLASSIFICATION OF SUBJECT MATTER

Int. Cl⁷ H01L21/304

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int. Cl⁷ H01L21/304

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Jitsuyo Shinan Koho	1940-1996	Toroku Jitsuyo Shinan Koho	1994-2003
Kokai Jitsuyo Shinan Koho	1971-1996	Jitsuyo Shinan Toroku Koho	1996-2003

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5063609 A (APPLIED MATERIALS INC.), 11 October, 1989 (11.10.89), Fig. 2 & JP 3-137401 A Fig. 2 & EP 422653 A	1, 2, 5, 12
Y	JP 2002-110611 A (Texas Instruments Japan Ltd.), 12 April, 2002 (12.04.02), Page 2, right column, line 50; page 3, left column, lines 21 to 24; Fig. 1 (Family: none)	1, 2, 14-16

 Further documents are listed in the continuation of Box C. See patent family annex.

* Special categories of cited documents:	
"A"	document defining the general state of the art which is not considered to be of particular relevance
"E"	earlier document but published on or after the international filing date
"L"	document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O"	document referring to an oral disclosure, use, exhibition or other means
"P"	document published prior to the international filing date but later than the priority date claimed
"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&"	document member of the same patent family

Date of the actual completion of the international search
30 September, 2003 (30.09.03)Date of mailing of the international search report
21 October, 2003 (21.10.03)Name and mailing address of the ISA/
Japanese Patent Office

Authorized officer

Facsimile No.

Telephone No.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP03/08048

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	JP 9-251975 A (Sakaguchi Dennetsu Kabushiki Kaisha), 22 September, 1997 (22.09.97), Page 2, left column, lines 25 to 26 (Family: none)	1, 8
Y	JP 2000-91288 A (Purex Co., Ltd.), 31 March, 2000 (31.03.00), Page 6, left column, lines 32 to 33 (Family: none)	2
Y	JP 2001-252550 A (Yokogawa Electric Corp.), 18 September, 2001 (18.09.01), Page 2, right column, lines 8 to 20 (Family: none)	2
Y	JP 9-327669 A (Ibiden Co., Ltd.), 22 December, 1997 (22.12.97), Page 4, left column, lines 31 to 34 (Family: none)	3, 6
Y	JP 9-199472 A (Komatsu Electronics Kabushiki Kaisha), 31 July, 1997 (31.07.97), Page 2, left column, lines 40 to 41 (Family: none)	4, 7
Y	Microfilm of the specification and drawings annexed to the request of Japanese Utility Model Application No. 238/1984 (Laid-open No. 128733/1984) (NEC Corp.), 30 August, 1984 (30.08.84), Full text; Figs. 1 to 2 (Family: none)	9
Y	JP 10-55991 A (Hitachi, Ltd.), 24 February, 1998 (24.02.98), Page 2, left column, line 35 (Family: none)	10, 11
Y	US 5520743 A (TOKYO ELECTRON KABUSHIKI KAISHA), 31 August, 1993 (31.08.93), Column 2, lines 33 to 46 & JP 6-84864 A Page 2, right column, lines 34 to 41 & KR 276426 B	12, 13